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REMARKS

Claims 1-14 were in the application as originally filed. Claim 4 has been previously cancelled. New Claims 15 -20 were added by previous amendments. Claim 5 is amended herein to avoid a 35 USC 112 issue. Claim 19 is amended to depend from Claim 18. Other claims have been amended herein to increase clarity.

REJECTIONS UNDER 35 USC 112

Claim 5 is rejected under 35 USC 112 as indefinite for failing to particularly point out the invention. Claim 5 recites polyvinylpyrrolidone homopolymer but mentions that there are some other polymers included. The Examiner asserts that the scope of the claim is not clear. You are correct that a homopolymer is a polymer made up of a single monomer. I have amended Claim 5 to clarify this point.

REJECTIONS UNDER 35 USC 102

Claims 1-3, 8-10, 12 and 14-20 are rejected as anticipated by Hirai (US 2003/0146019). Hirai is cited as disclosing similar ink jet ink. Although there is no disclosure of the ink's stability, the examiner asserts that the ink of Hirai would inherently possess a similar stability to the instant ink.

Claims 1-3, 5, 8-10, 12 and 14-17 are rejected under 35 USC 102(b) as being anticipated by DE 19846096. As pointed out previously, that German reference is directed to nano-sized materials, i.e. . . . up to 100 nm. Although Applicant's claims are now limited average particle size (D50) is 0.1 to 1.2 microns. The Examiner continues to argue that the reference would inherently possess stability as claimed and the particle size is close to those of the reference. As was mentioned previously, DE 19846096 does not disclose a composition with a viscosity between 5 mPa.s to 50 mPa.s at a temperature of 25°C to 35°C. Furthermore, there is no disclosure of a composition which is stable for 24 hours. It can't be presumed, without some additional information or testing, that the reference inherently possess applicant's stability as there is nothing in the reference to even suggest this large advantage. Further, DE 19846096 does not disclose a composition comprising a conductive material of silver. Newly added claim 20 identifies a silver composition and falls outside of the limitations of DE 19846096.

Claims 1-3, 5, 8-12 and 14-20 are rejected under 35 USC 102(e) as anticipated by Kodas et al. (US 1003/0175411). Kodas et al described ink jetting precursor compositions of

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electronic conductor, resistor and dielectric compositions. The precursors are soluble organometallic materials. Kudas et al also mentioned that nano-sized particles could be mixed with precursor compositions. Applicant's claims are directed to ink jet compositions with **larger particles and a low viscosity at the same time**. Applicant discovered that PVP polymers can enable such compositions.

The Examiner notes that although there is no disclosure in Kudas et al about the composition's stability for 24 hour, he argues that this feature is inherent in Kudas et al's composition. Applicant again argues that the present particles are different from those of Kudas et al. and overcomes the Examiner's assertion that the claims are anticipated. Applicant again points out that Kudas at paragraph [0045] recites a hollow micron-size particle and further goes on to describe that such particles "...have a useful shelf life without the necessity of mechanical mixing techniques. Thus, it is preferred that a large mass fraction of the particles, such as at least about 50 weight percent remain suspended in the liquid for at least 1 hour." At paragraph [0054]. "Furthermore, the particles can be completely redispersed after settling, such as by mixing, At paragraph [0054]. This clearly indicates that the composition of Kudas is not capable of stability for 24 hours. Kudas details that its composition is only stable for about 1 hour and requires mechanical mixing techniques to enhance its effectiveness after the 1 hour.

Applicants further point out that the composition of the present invention is "stable for up to 24 hours without noticeable silver particle settlement and could still be jetted. After about 24 hours (not merely one hour), a stable and jettable dispersion can be re-obtained by simply shaking of the mixture manually." (See Examples)

Additionally, the Examiner points out that Kudas discloses a composition with a viscosity of 10-40 cP. However, Kudas does not disclose a particular viscosity at a particular temperature. In fact, Kudas discloses that its viscosity is "...measured at a shear rate of 132 Hz and under the relevant deposition condition, particularly temperature. For example, some precursor compositions may be heated prior to and/or during deposition to reduce viscosity." At paragraph [0022]. The present composition does not require such heating. As such, Applicant's assert that the elements of their claim 1 are not disclosed in Kudas.

The Examiner continues to argue that Kudas would inherently possess the present composition's stability and possess its other characteristics as Kudas' composition is used in

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an ink jet printer. The fact that both Kodas' composition and the present composition are both used for ink jetting does not, by itself, indicate that these compositions are the same. The differences discussed above make it clear that the compositions are different.

The Examiner continues to argue that Kodas' disclosure of stability for at least one hour can be extrapolated to indicate that the Kodas composition is stable somewhat more than 1 hour and up to 24 hours. Applicants argue that there is no basis to in Kodas to arrive at applicant's 24 hour stability. If Kodas's ink jet composition had been stable for a period much larger than one hour, he would certainly have emphasized this improvement. Kodas does not make such claim.

REJECTIONS UNDER 35 USC 103

Claim 5 has been rejected as obvious over Hirai (US 2003/0146019) in view of Zhu et al. (US 6,251,175). The Examiner notes that the difference between applicant's claim and these references is the requirement of poly(meth) acrylate.

Hirai is said to disclose ink with binder. The Examiner found it obvious to use acrylin resin in the ink of Hirai to produce ink with rapid dry time and thus arrive at the present invention.

As noted previously, Hirai discloses a composition with most particles being nano-sized particles. As noted above, the amendment giving an average particle size avoids this nano-sized materials of the reference. The amendment makes it clear that most of its particles fall outside the range of the particles in Hirai.

Claims 13 is rejected as obvious over DE 19846096 or Kodas in view of Shioi. The Examiner notes that the difference between the present claims of Harai or Kodas is the coating of the conductor with fatty acid. Further differences are detailed above under the 35 USC 102 issues. Applicant respectfully points out that the present invention requires a specific type of monomer not found in Kodas. The previous arguments regarding Kodas above are incorporated herein.

Shioi, which is cited as a secondary teaching reference, is cited for its teaching of coating metal reagents with a fatty acid surfactant and providing the motivation to combine Kodas and Harai with the fatty acid. Shioi et. al claim an "ink composition for writing on an absorbent or pervious writing surface to form thereon a writing or marking composed of an inner portion of a metallic color with outer contour portions there around of a dyestuff-based color, which composition consists essentially of: a nonleafing metal powder

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pigment as a first pigment, an inorganic pigment other than a metal powder or organic pigment as a second pigment, a dyestuff, and a solvent, the nonleafing metal powder pigment being dispersed in the solvent and having a particle size sufficiently large so as to substantially not permeate or be absorbed into the writing surface, and the second pigment being dispersed in the solvent and either having a particle size sufficiently large so as to substantially not permeate or be absorbed into the writing surface, or having a particle size sufficiently large so as to substantially be absorbed on the nonleafing metal powder pigment, the dyestuff being dissolved in the solvent, being capable of substantially permeating or being absorbed into the writing surface and diffusing into the area on the writing surface proximate to the writing, whereby the nonleafing metal powder pigment forms in conjunction with the second pigment the inner portion of the metallic color, and the dyestuff forms the outer contour portions of the dyestuff-based color around the inner portion." The present invention, while in the ink jetting field, does not contain the specific dyestuff materials and pigments disclosed in Shioi.

Claim 7 was rejected over Kodas et al. which uses monomer, along with Adkins. Adkins et al is cited as disclosing the equivalence and interchangeability of using certain organics. Applicant again points out that the average particle size differentiates its claims from the disclosures in Kodas and would apply to Claim 7 that depends from Claim 1 through Claim 6.

In view of the foregoing discussion and amendments, allowance of Claims 1-20, as further emended herein, is respectfully requested.

If anything further is required to advance this case to allowance the Examiner is invited to contact applicants' attorney at the telephone number below.

Respectfully submitted,



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Dated: 10-19-07